

What is claimed is:

1. An electron beam treatment apparatus that includes:
an array of lamps that output radiation;
a support mechanism adapted to support a substrate at a treatment position
5 above the lamps; and
a lamp heat shield, disposed above the array, having a radiation absorption
portion adapted to absorb radiation from at least a portion of the array, and a radiation
reflection portion adapted to reflect radiation from at least a portion of the array towards
the substrate when disposed at the treatment position.
- 10 2. The apparatus of claim 1 wherein the radiation absorption portion is
planar and is disposed substantially parallel to a plane of the substrate when disposed at the
treatment position.
3. The apparatus of claim 2 wherein a reflecting surface of the radiation
reflection portion is positioned to reflect radiation and is disposed at an angle with respect
15 to a perpendicular to the plane of the radiation adsorption portion.
4. The apparatus of claim 3 wherein an absorbing surface of the
radiation absorption portion is positioned to absorb radiation and has grooves formed
therein.
5. The apparatus of claim 4 wherein the absorbing surface is bead
20 blasted.
6. The apparatus of claim 5 wherein the grooves are circular grooves.
7. The apparatus of claim 3 wherein the reflecting surface has a mirror-
like finish.
8. The apparatus of claim 1 wherein the lamp shield is fabricated from
25 aluminum.
9. The apparatus of claim 1 wherein the lamp shield is fabricated from
one or more of a metal, quartz, and ceramic.
10. The apparatus of claim 3 wherein the angle is about 50°.

11. The apparatus of claim 3 wherein the reflecting surface has a reflectivity of about 90%.

12. A lamp heat shield useful in an electron beam treatment apparatus which comprises:

5 a radiation absorption portion adapted to absorb radiation from at least a portion of an array of lamps disposed below the shield; and

 a radiation reflection portion adapted to reflect radiation from at least a portion of the array towards an object disposed within the radiation reflection portion.